OVERVIEW OF INFORMATION TECHNOLOGY NONVISUAL ACCESS REGULATORY STANDARDS

COMAR 17.06.02.01-.12

DEPARTMENT OF BUDGET AND MANAGEMENT

April 15, 2005

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1 Introduction

On March 1, 2005, Maryland's Information Technology Nonvisual Access Regulations became effective[1]. This document, *Overview of Information Technology Nonvisual Access Regulatory Standards,* provides an overview to assist non-exempt units of the Executive Branch in complying with the State's information technology nonvisual access regulatory standards, and establishes the general requirements and responsibilities for ensuring that information technologies are compliant with the regulatory requirements for nonvisual access.

Compliance with the regulations is mandatory in the procurement of information technologies, and the provision of information technology services, by or on behalf of all units and public institutions of higher education in the Executive Branch of State government, with the exception of:

i. The Maryland Port Administration;
ii. Public institutions of higher education in the management, development, purchase, or use of information technologies solely for academic or research purposes;
iii. The University System of Maryland;
iv. St. Mary's College of Maryland; and
v. Morgan State University.

In short, except for information technologies incidental to a contract, where technologies simply do not exist, or compliance is cost prohibitive, all information technologies, including services that are procured, used, maintained, developed or provided by or on behalf of non-exempt units of the Executive Branch of State government will be nonvisually accessible. Agencies within the scope of these regulations are to procure information technologies, including services that are compliant in the commercial marketplace, or developed in response to State government solicitation.

In developing the nonvisual access regulations, the State has adopted or paraphrased many, but not all, of the Federal regulations commonly referred to as Section 508[2]. In addition, Maryland has adopted several information technology nonvisual access regulations that are not found in Federal regulations.

The *Overview* provides guidance to advise agencies required to comply with the regulations.

[1] COMAR 17.06.02.01-.12: http://www.dsd.state.md.us/comar/subtitle_chapters/17_Chapters.htm
[2] 36 CFR 1194 (Section 508 of the Rehabilitation Act (29 U.S.C. 794d), as amended by the Workforce Investment Act of 1998 (P.L. 105-220) (August 7, 1998) http://www.access-board.gov/sec508/guide/index.htm

2 Applicability and Exceptions

2.1 Applicability

In accordance with COMAR 17.06.02.01-.12 the nonvisual access standards apply to all information technology (IT) procurements made, and IT services provided, by or on behalf of non-exempt units of the Executive Branch of State government. Beginning March 1, 2005, agencies within the scope of these regulations are to procure or develop information technologies, including services, compliant with COMAR 17.06.01-.12.

When procuring or using commercially available information technology, an agency may not claim that an information technology product as a whole is not commercially available, because no product in the marketplace meets all the standards. Assuming all other criteria are met, if products are commercially available that meet some but not all of the standards, the agency shall procure the product that best meets the standards. **COMAR 17.06.02.03.C.**

Information technology and information technology services shall be obtained by non-exempt units, whenever possible, without modification for compatibility with software and hardware for nonvisual access.[3] If a commercially available technology (that is not otherwise accessible) can be made nonvisually accessible through modification or the use of assistive or adaptive products without increasing the price of the procurement by more than 5 percent, an agency must use such modifications or assistive or adaptive products beginning March 1, 2005. The agency procurement officer will make the final determination upon consultation with agency information technology subject matter experts or end-users as needed. **COMAR 17.06.02.02.A.**

Programmers designing agency information technologies are not limited to the standards promulgated in COMAR 17.06.02, and may select alternative designs or technologies so long as the end result would be State information technologies substantially equivalent or providing even greater access for people with visual disabilities. An Agency may not use an alternate method if the end result is information technologies or services that are less accessible than the technologies or services would be if the standards of COMAR 17.06.02 were followed. **COMAR 17.06.02.03.D.**

Except as otherwise required to comply with other law, an Agency is not required to install accessibility-related software or an assistive technology device at the workstation of a State employee who is not visually disabled. **COMAR 17.06.02.02.D.**

The nonvisual access regulations:

i. Do not require agencies to purchase nonvisually accessible information technologies for access or use by individuals with disabilities at places other than where the information technologies are usually provided to the public; **COMAR 17.06.02.02.E.(2).**

[3] Md. Ann. Code, State Fin. & Proc. §3-412(b)(2), providing that subsection (a)(4) is excepted from the circumstances when the nonvisual access clause is not required.

ii. Do not require agencies to provide nonvisually accessible information technologies to the public at places other than where the information technologies are usually provided to the public; **COMAR 17.06.02.02.E.(1).** and
iii. Do not waive an obligation of a State agency to provide information or data under other requirements of the law. **COMAR 17.06.02.02.F.**

Agencies that provide access to public documents through an existing Internet site or portal may continue to use the existing Internet site and procedures for access if the Internet site is nonvisually accessible.

These regulations are not designed to foreclose other means of providing nonvisual access but to encourage equivalent access. Agencies or others are encouraged to suggest to the State Chief of Information Technology other standards that will provide equivalent access for review and possible inclusion in future revisions of this subtitle.

2.2 Exceptions

Compliance with the regulations is mandatory in the procurement of information technologies, and provision of information technology services by or on behalf of all units and public institutions of higher education in the Executive Branch of State government, with the exception of:

i. The Maryland Port Administration;
ii. Public institutions of higher education in the management, development, purchase, or use of information technologies solely for academic or research purposes;
iii. The University System of Maryland;
iv. St. Mary's College of Maryland; and
v. Morgan State University.

State Finance and Procurement Article §3-401
COMAR 17.06.01.01

However, under certain circumstances, an organization that is otherwise required to comply with the nonvisual accessibility regulation is permitted to purchase information technologies or information technology services that are not nonvisually accessible if:

i. The information technologies, including services, are incidental to a contract and not deliverables;
ii. Compliant information technology is not available or cannot be developed; or
iii. The cost of modifying the information technology for nonvisual access would increase the cost of the procurement by more than 5%.

COMAR 17.06.02.02.A., B.

2.3 Exception Determination

For systems developed internal to the agency, the agency's Chief Information Officer, or equivalent, is responsible for the final determination of whether an exception exists. For systems and services obtained from sources outside of the agency, the procurement officer, pursuant to COMAR 21.05.08.05B, makes the final determination whether an exception exists. To support this determination it may be advantageous to incorporate into IT solicitations the requirement for two separate prices be provided by all bidders/offerors:

i. The first price would provide the base costs without modification for compatibility with software and hardware for nonvisual access, and
ii. The second price would include the costs for modifying the information technologies for compatibility with software and hardware for nonvisual access.

The procurement officer then calculates the variance between the prices submitted by a bidder/offeror to determine if an exception applies.

Infrequently, there may be instances where an information technology is not available with nonvisual access because the essential elements of the information technology are visual, such as would be the case with a drawing program. In these instances, after ensuring that compliance cannot be obtained through the use of meta tags, an exception condition exists.

It is recommended that in those instances where the procurement officer determines that an exception condition exists, agencies obtain a written statement from the fulfilling vendor that either:

i. The information technology is not available with nonvisual access because the essential elements of the information technology are visual and nonvisual equivalence cannot be developed; or
ii. The cost of modifying the information technology for compatibility with software and hardware for nonvisual access would increase the price of the procurement by more than 5 percent.

3 Compliance Certification

Each Executive Branch agency required to submit an annual Information Technology Master Plan (ITMP) to the Department of Budget & Management[4] (DBM) is required to include within the ITMP a certification of compliance statement concerning nonvisual access of agency information technologies.

In instances where the procurement of information technologies or the provision of information technology services by or on behalf of the State government unit has been proposed in the agency ITMP, and a corresponding annual budget request submitted but funding has not yet been approved and the technologies have not yet been procured or provided, the agency is not required to certify that the associated information technologies are nonvisually accessible. DBM will include additional guidelines in the instructions for preparing and submitting the agency ITMP. **COMAR 17.06.02.12.**

[4] State Fin. & Proc. §3-403(d)(2) (2001 Repl.)

4 Telecommunications and Interconnected Network Equipment

4.1 Integration

Information technology intended for use in telecommunications or other interconnected network services shall be integrated for obtaining, retrieving, and disseminating visual information by nonvisual means. The intent of the regulation is to ensure that State telecommunications and networks used by individuals who are blind or visually impaired are compatible with, and capable of receiving, recovering and distributing graphics, forms and other visual information by means specified in, nonvisual accessibility features of State information technologies. COMAR **17.06.02.06.A.**

4.2 Telecommunication Controls

This provision only applies to products that have mechanically operated controls or keys, such as standard telephone keypads and computer keyboards. It is not intended to apply to touch-screens. Telecommunications products having mechanically operated controls or keys shall be considered nonvisually accessible if:

i. Controls and keys are tactilely discernible without activating the controls or keys; and
ii. The status of all locking or toggle controls or keys is discernible either through touch or sound in addition to being visually discernible.

COMAR 17.06.02.06.D.

"Tactilely discernible" means that individual keys must be identifiable and distinguishable from adjacent keys by touch. Compliance with this provision can be accomplished by using various shapes, spacing, or tactile markings. Many phones also have a raised dot on the number 5 button, enabling them to orient their fingers around the 12 keys.

4.3 Personal Digital Assistants (PDAs) and Mobile Phone Systems

The intent of the regulation is to ensure that mobile telecommunications devices and systems deliver text to end-user devices and that the end-user devices convert the delivered text to good quality synthesized speech. Good quality synthesized speech, utilizing either concatenative synthesis or parameterized modeling, includes[5]:

i. Accurate spectral voice properties;
ii. Reasonable dynamic range;
iii. Constant volume;
iv. Filtered side-effects of speech (such as pops); and
v. Accurate segmentation and voice definition.

Personal digital assistants (PDAs) and mobile phone systems shall be considered nonvisually accessible if the products:

[5] Paper presented at IEE Seminar "State-Of-The-Art In Speech Synthesis". London, April 2000. FLEXVOICE: A PARAMETRIC APPROACH TO HIGH-QUALITY SPEECH SYNTHESIS. György Balogh, Ervin Dobler, Tamás Grőbler, Béla Smodics, Csaba Szepesvári (* Mindmaker Ltd., Budapest, Hungary; Email: grobler@mindmaker.hu)

i. Are captioned text-to-speech capable;
ii. Use a distributed speech processing architecture, where the client (device) synthesizes text-to-speech output; and
iii. Provide good quality synthesized speech capable of being understood by the average listener.

COMAR 17.06.02.06.B.

4.4 Encoding, Compression, Transformation

Technologies using encoding, signal compression, format transformation, or similar techniques shall be considered nonvisually accessible if the technologies either:

i. Do not remove information needed for nonvisual access; or
ii. Restore information needed for nonvisual access upon delivery to the device.

The statutory regulation requires use of telecommunications or network products that do not strip out nonvisual accessibility information. If the nonvisual accessibility information is stripped out during transmission, the statutory regulation requires that the nonvisual accessibility information be restored at the point of delivery to the end user.

COMAR 17.06.02.06.C.

5 Video and Multimedia Products

5.1 Training and Informational Video and Multimedia Productions

All training and informational video and multimedia productions that support the agency's mission, regardless of format, that contain visual information necessary for the comprehension of the content, shall be audio described. **COMAR 17.06.02.07.A.** For instance, a training film regarding how agency personnel should determine an applicant's eligibility for health benefits is a training production that supports the agency's mission and must be compliant. Other examples include:

i. A video of a retirement celebration would not be "in support of an agency's mission" and is not covered by these provisions.
ii. Raw videotaped footage recorded by a field investigator to document a safety violation could be considered a film "in support of an agency's mission". However, it is not a "production" and therefore does not need to be captioned or audio described, unless the footage were subsequently incorporated into agency training or an informational presentation.

Captioning and audio descriptions are only required when it is important to understand the audio or visual components of a video or multimedia production together. That is, even if a production "supports the agency's mission," only those audio portions that are necessary for the comprehension of the production's content need to be captioned and only those visual portions that are necessary for the comprehension of the production's content need to be audio described. For example:

i. A videotaped lecture would need to capture the lecturer's words in captions if it were intended to be used for future training, but the captions need not also relate that students' chairs were squeaking or that the door at the back of the room was closing loudly as people exited.
ii. A videotaped lecture would need to include an audio description of graphics the lecturer draws on a chalkboard to illustrate a point, but would not need to include an audio description of the strictly verbal portion of the lecture.

5.2 Presentation of Audio Descriptions

Presentation of audio descriptions may be user-selectable or permanent. **COMAR 17.06.02.07.B.** Certain media provide additional controls that allow a user to select whether or not audio descriptions are enabled. For example, the audio description on VHS format videos is permanently encoded and is always "on." CD-ROMs, DVDs, and other digital forms of multimedia can support alternate audio channels for audio description.

The use of SMIL (Synchronized Multimedia Integration Language) or other technologies will allow for integration of user selectable audio descriptions into digital multimedia presentations. Be considerate that choosing alternate tracks for audio description varies by medium and usually involves selection from an on-screen menu for the device being used. Theses on-screen menus

must be made audible or otherwise readily selectable so that people with visual disabilities can independently gain access to audio descriptions.

6 Self Contained, Closed Products

Self-contained, closed products include items such as copier machines, calculators, fax machines, information transaction machines, and information kiosks. **COMAR 17.06.01.02**. These types of products generally have embedded software and are commonly designed in such a fashion that a user cannot easily attach or install assistive technology. For example, one could attach a screen reader to a computer to meet the standard but would not be expected to attach a screen reader to a copier machine. Unlike other provisions that allow a product to meet the standards by being compatible with assistive technology, this provision requires self contained, closed products to contain built-in accessibility. **COMAR 17.06.02.08.A.**

6.1 Touch Screens or Contact Sensitive Controls

If a self contained, closed IT product utilizes a touch screen or other contact-sensitive controls, an input method shall be provided so that:

i. Controls and keys are tactilely discernable without activating the controls or keys, and
ii. The status of all locking or toggle controls or keys is discernible either through touch or sound in addition to being visually discernable.

COMAR 17.06.02.08.B.

6.2 Ocular Identification

Ocular identification is a biometric control activated only if a particular biological eye feature of the user exists and matches specific criteria. An example includes retinal scans that may become common practice for allowing an individual to gain access to personal data from an information transaction type of machine. Biometric controls provide a high level of security. However, when a system needs to be accessed by a person with a visual disability, a non-biometric alternative should be provided that does not compromise security. If an ocular form of user identification or control is used, an alternative form of identification or activation that does not require the user to possess a particular ocular characteristic shall also be provided. **COMAR 17.06.02.08.C.**

6.3 Auditory Output

If a product provides auditory output, the audio signal shall be provided at a standard signal level through an industry standard connector that allows for private listening using a headset or personal speakers. The product shall provide the ability to interrupt, pause, and restart the audio at any time. This provision applies only to voice output and to "beeps" or "tones". Standard connectors include the 2.5 mm jacks common on most cellular phones and the 3.5 mm jacks found on most portable stereos. Proprietary connectors are highly discouraged. **COMAR 17.06.02.08.D.**

6.4 Voice Output In Public Areas

According to the Occupational Safety and Health Administration, and the American Speech, Language, and Hearing Association, 65 dB is the volume level for normal speech. When

products deliver voice output in a public area, incremental volume control shall be provided with output amplification up to a level of at least 65 decibels. Where the ambient noise level of the environment is above 45 decibels, a volume gain of at least 20 decibels above the ambient level shall be user selectable. A function shall be provided to automatically reset the volume to the default level after every use. **COMAR 17.06.02.08.E.**

6.5 Color Coding Visual Elements

Presenting information in a manner that requires a user to distinguish between otherwise identical red and blue squares for different functions (e.g., printing a document versus saving a file) poses a problem for anyone who is visually disabled, and would otherwise be very difficult to use even with assistive technology. Color-coding may not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element. While screen-reading software can announce color changes, this is an "on/off" feature, which means that if a user had to identify a specific color, they would have to have all colors announced, greatly reducing the usability of the software for that person.

This provision does not prohibit the use of color to enhance identification of important features. It does, however, require that some other method of identification, such as text labels, be combined with the use of color. **COMAR 17.06.02.08.F.**

6.6 Color and Contrast Adjustments

If a product permits a user to adjust color and contrast settings, a range of color selections capable of producing a variety of contrast levels shall be provided. This provision applies only to those products that already allow a user to adjust screen colors.

This provision requires more than just providing color choices. The available choices must also allow for different levels of contrast to accommodate people who experience a high degree of sensitivity to bright displays. This sensitivity prevents people to focus on a bright screen for long because they will soon be unable to distinguish individual letters. An overly bright background causes a visual "white-out". To alleviate this problem, the user must be able to select a softer background and appropriate foreground colors. On the other hand, many people with low vision can work most efficiently when the screen is set with very sharp contrast settings. **COMAR 17.06.02.08.G.**

6.7 Screen Flicker

To minimize the effects of screen flicker, products shall be designed to avoid causing the screen to flicker with a frequency less than 2 hertz and/or greater than 55 hertz. **COMAR 17.06.02.08.H.**

7 Desktop and Portable Computers

7.1 Mechanically Operated Controls and Keys

Because touch is necessary to discern tactile features, this provision requires keyboards to enable touch that does not automatically activate a function based on mere contact. Fortunately most keyboards require some pressure on individual keys in order to enable a keystroke. **COMAR 17.06.02.09.A.**

Individual keys must be identifiable and distinguishable from adjacent keys by touch. Compliance with this provision can be accomplished by using various shapes, spacing, or tactile markings. The normal desktop computer keyboard, for example, would meet this provision because the tactile marks on the "j" and "f" keys permit a user to locate all other keys tactilely. Many phones also have a raised dot on the number 5 button, enabling them to orient their fingers around the 12 keys. In addition, the physical spacing of the function, "numpad" and cursor keys make them easy to locate by touch.

"Capacitance" keyboards would not meet this provision because they react as soon as they are touched and have no raised marks or actual keys. A "membrane" keypad with keys that must be pressed can be made tactilely discernible by separating keys with raised ridges so that individual keys can be distinguished by touch.

The provision also requires the status of toggle controls, such as the "caps lock" or "scroll lock" keys to be identifiable by either touch or sound, in addition to visual means. For example, adding audio patterns, such as ascending and descending pitch tones that indicate when a control is turned on or off, would alleviate the problem of a person who is blind inadvertently pressing the locking or toggle controls. Buttons that remain depressed when activated and switched with distinct positions may meet this provision.

7.2 Touch Screens and Touch Operated Controls

If a desktop and portable computer uses touch screens or other touch-operated controls, such as keyboards, an input method shall be provided so that:

i. Controls and keys are tactilely discernable without activating the controls or keys, and
ii. The status of all locking or toggle controls or keys is discernible either through touch or sound in addition to being visually discernable.

COMAR 17.06.02.09.B.

7.3 Ocular Identification and Control

When an ocular form of user identification or control is used (i.e. products using biometric identifiers), an alternative form of identification or activation, which does not require the user to possess particular ocular characteristics, shall also be provided. **COMAR 17.06.02.09.C.**

8 Functional Performance Criteria

8.1 In General

The intent of the regulation is to ensure nonvisual accessibility of State information technologies and information technology services to visually disabled end-users of the technologies. An information technology must provide at least one mode of operation and information retrieval that does not require the use of sight. If it does not then the agency must provide to the visually disabled the means to access or acquire assistive technology for State-related activities.

An information technology must provide at least one mode of operation and information retrieval via audio or enlarged print output that does not require visual capabilities more than a tested 20/70 acuity. If it does not then the agency must provide to the visually impaired the means to access or acquire assistive technology for State-related activities. **COMAR 17.06.02.10.**

8.2 Software, Intranet/ Internet Information & Applications

Software applications, including operating systems, and browser based intranet and Internet information and applications shall be considered nonvisually accessible if the products and services meet the requirements of 36 CFR §1194.21-.22, incorporated by reference in the regulations[6]. For complete federal implementation guidelines for Section 508 Standards, link to:

http://www.access-board.gov/sec508/guide/1194.21.htm
and
http://www.access-board.gov/sec508/guide/1194.22.htm.

COMAR 17.06.02.04.

[6] COMAR 17.06.02.04-.05

9 Information, Documentation and Support

The intent of the regulation is to ensure that if an end-user requests information technology product support documentation, such as a user instruction paper or manual, a State agency will provide one copy of the documentation in a non-visually accessible alternate format at no charge to the requestor. **COMAR 17.06.02.11.A.**

9.1 Documentation Guidance

Users with visual disabilities require access to information in text formats. Information should include documentation on the accessibility features and be available in a readily accessible format (text or HTML) or, if not, can be made nonvisually accessible.

9.2 Content Guidance

Content should be provided in a readily accessible formats (text or HTML). Content developed and distributed using PDF (Portable Document Format) files must be compatible with the compliant features of Adobe Acrobat Reader 6.0 and later versions. Beginning with Adobe Acrobat Reader 6.0 nonvisual accessibility features such as PDF text-to-speech functionality are available for PDF files. When providing electronic documents developed with earlier versions of Adobe products, at a minimum you should:

i. Utilize a word processor such as Microsoft Word to create or convert older documents before creating the PDF document.
ii. Verify that information about the document's content structure (document language, headings or titles, tables, columns and text flows such as a table of contents) and images (text descriptions) is embedded in the document to allow assistive technologies such as screen readers to implement a logical reading order.
iii. Verify that PDF Image Only files are converted to tagged Adobe PDF documents with applied (Optical Character Recognition) OCR so that a screen reader will be able to recognize and read the document as text.

9.3 Description of Accessibility

The intent of the regulation is to ensure that if an end-user requests a description of an information technology's accessibility and compatibility features, a State agency will provide one copy of the descriptions in a non-visually accessible alternate format or alternate method, and at no charge to the requestor. An example of an alternate method is a verbal communication of the description to the requestor. **COMAR 17.06.02.11.B.**

9.4 Support Services

The intent of the regulation is to ensure that end-users with disabilities have access to support services, for information technology products within the scope of the regulation, that meet their interaction and data transmission requirements. Support services for such products include help desk, repair and instruction services. **COMAR 17.06.02.11.C.**

10 Definitions

COMAR 17.06.01.02

Accessible:	Easy to get to, Approachable or Available.
Agency:	Each unit of State government to which this subtitle is applicable in accordance with State Finance and Procurement Article, §3-401, Annotated Code of Maryland, and Regulation .01 of this chapter.
Applet:	A program or subprogram that interprets content on web pages.
Assistive Technology:	Any item, piece of equipment, or system, whether acquired commercially, modified, or customized, that is commonly used to increase, maintain, or improve functional facilities of individuals with disabilities. It does not include personal headsets for private listening.
Closed Products:	See Self Contained Products.
Equivalent:	Fulfilling essentially the same function or purpose upon presentation to a user. Fulfills essentially the same function for a person with a disability utilizing reasonable accommodations to the extent possible, given the nature of the disability and the state of technology, as the primary content does for the person without a disability.
Image Map:	An image that has been divided into regions with associated actions which by clicking on an active region causes an action to occur.
Information Technology:	All electronic information processing hardware and software, including maintenance, telecommunications and associated consulting services.
Information Technology Services:	Information provided by electronic means by or on behalf of a unit of State of government.
Interconnected Network Services:	The support of direct or indirect facilities for telecommunication and computer connections such that telecommunications operate in a reliable and secure manner.

Intranet:	An organization's internal Internet. An Intranet is a privately maintained network offering the same kind of facilities, news, file transfer protocol (FTP), and World Wide Web (WWW) as can be found on the Internet. Intranet may only be accessed by users authorized by the owning organization.
Mobile Phone Systems	Analog or digital telephonic transmission hardware and software.
Multimedia Productions:	Productions that present information in more than one sensory mode, e.g., both audibly and visually. For instance, streaming video with a soundtrack is a multimedia production. A show broadcast through a radio station is audio only and therefore not covered by this captioning requirement. However, the procurement of information technology necessary to operate the radio station would be covered under the standard.
Nonvisual Access:	The ability, through keyboard control, synthesized speech, braille, or other methods not requiring sight, to receive, use, and manipulate information, and operate controls necessary to access information technology.
Personal Digital Assistant (PDA):	A hand-held computer used in entering, storing, and displaying schedules, appointments, addresses, phone numbers, and other personal data; and for sending and receiving messages and faxes.
Screen Reader:	A software program that reads the contents of the screen aloud to a user, usually reads only text that is printed to the screen; and does not generally read graphic images.
Self-Contained Products:	Products that generally have embedded software and are commonly designed so that a user cannot easily attach or install assistive technology. May include, but are not limited to: information kiosks and information transaction machines, copiers, printers, calculators, fax machines, and other similar types of products.
Script:	A programmatic set of instructions that when downloaded with a web page will permit the user's computer to share the processing of information with the web server.
Style Sheet:	A set of statements, generally termed templates, that specify presentation of a document. May be written by content providers, created by users, or built into user agents.

Telecommunications:	The transmission of information, images, pictures, voice, or data by radio, video, or other electronic or impulse means.
Text Equivalents:	Alternative presentations of graphic or audio information or functionality in words readable electronically as data.

11 Maryland Annotated Code References

The text of Maryland Annotated Code State Finance and Procurement, Title 3, Budget and Management, Subtitle 4, Information Processing, may be found online at:

http://mlis.state.md.us/other/MGA_FAQ.htm#stat10

or

http://198.187.128.12/maryland/lpext.dll?f=templates&fn=fs-main.htm&2.0

Maryland Annotated Code State Finance and Procurement, Title 3, Budget and Management, Subtitle 4, Information Processing / § 3-402. Definitions. (i) *Nonvisual access*. [1993, ch. 120; 1994, ch. 493, § 2; 1996, ch. 87, § 1; ch. 349, § 13; 1998, ch. 591; 2000, chs. 619, 620; 2001, ch. 29, § 6; 2002, chs. 467, 468.]

Maryland Annotated Code State Finance and Procurement, Title 3, Budget and Management, Subtitle 4, Information Processing /§ 3-410. Chief of Information Technology. (d) *Duties*. [1994, ch. 493, § 2; 1996, ch. 349, § 3; 2000, chs. 5, 619, 620; 2002, chs. 467, 468.]

Maryland Annotated Code State Finance and Procurement, Title 3, Budget and Management, Subtitle 4, Information Processing /§ 3-412. *Nonvisual access clause*. [1998, ch. 591; 2000, chs. 619, 620.]

Maryland Annotated Code State Finance and Procurement, Title 3, Budget and Management, Subtitle 4, Information Processing / § 3-413. *Delegation by Secretary; regulations*. [1993, ch. 120; 1994, ch. 493, § 1.]

12 Nonvisual Access Clause For Information Technology Procurements

The text below provides The Nonvisual Access Clause[7] required of State agencies to be used in each invitation for bid under COMAR 21.05.02 or request for proposals under COMAR 21.05.03 for the purchase of new or upgraded information technologies:

"The bidder or offeror warrants that the information technology offered under this bid or proposal (1) provides equivalent access for effective use by both visual and nonvisual means; (2) will present information, including prompts used for interactive communications, in formats intended for both visual and nonvisual use; (3) if intended for use in a network, can be integrated into networks for obtaining, retrieving, and disseminating information used by individuals who are not blind or visually impaired; and (4) is available, whenever possible, without modification for compatibility with software and hardware for nonvisual access. The bidder or offeror further warrants that the cost, if any, of modifying the information technology for compatibility with software and hardware used for nonvisual access will not increase the cost of the information technology by more than 5 percent.

"For purposes of this regulation, the phrase 'equivalent access' means the ability to receive, use, and manipulate information and operate controls necessary to access and use information technology by nonvisual means. Examples of equivalent access include keyboard controls used for input and synthesized speech, Braille, or other audible or tactile means used for output."

B. The nonvisual access clause is not required if the procurement officer makes a determination that:

(1) The information technology is not available with nonvisual access because the essential elements of the information technology are visual and nonvisual equivalence cannot be developed; or

(2) The cost of modifying the information technology for compatibility with software and hardware used for nonvisual access would increase the cost of the procurement by more than 5 percent.

C. The procurement officer may request such documentation as is reasonably necessary to implement this regulation.

[7] COMAR 21.05.08.05 As published in *Supplement 18 (1/4/2000) of Title 21 State Procurement Regulations: Code of Maryland Regulations* http://www.dsd.state.md.us/comar/21/21.05.08.05.htm